

1 VQE results Aer Estimator (No Shots)

(Full Hamiltonian)				Anharmonic Oscillator		$\Lambda = 8$	COYBLA Max 10K Iterations		
Ansatz	Tolerance	Converged runs	Mean iter	VQE min E.	Δ_{min}	VQE median E.	Δ_{median}	Exact	Time
RA r1 rl	1e-01	100/100	53	5.4558e-01	5.1357e-01	3.528e+00	3.4959e+00	3.2010110009e-02	00h 00m 23s
RA r1 rl	1e-02	100/100	264	4.2681e-02	1.067e-02	5.3619e-01	5.0418e-01	-	00h 01m 44s
RA r1 rl	1e-03	100/100	1358	3.2086e-02	7.5632e-05	3.674e-02	4.7303e-03	-	00h 06m 46s
RA r1 rl	1e-04	96/100	2301	3.2013e-02	3.3668e-06	3.2074e-02	6.3721e-05	-	00h 11m 40s
RA r1 rl	1e-05	69/100	2912	3.201e-02	1.5796e-08	3.201e-02	2.8581e-07	-	00h 21m 31s
RA r1 rl	1e-06	63/100	3981	3.201e-02	3.7302e-10	3.201e-02	4.6905e-09	-	00h 23m 58s
RA r1 rl	1e-07	54/100	4045	3.201e-02	2.0881e-12	3.201e-02	4.7654e-11	-	00h 26m 04s
RA r1 rl	1e-08	51/100	3898	3.201e-02	2.2385e-12	3.201e-02	6.2865e-12	-	00h 26m 20s
Ansatz	Tolerance	Converged runs	Mean iter	VQE min E.	Δ_{min}	VQE median E.	Δ_{median}	Exact	Time

Table 1